

Biomarker Characteristics of Triassic Kasımlar Formation; Akseki–Anamas Platform, Western Taurus, Turkey

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The Triassic Kasımlar Formation units located are composed of bituminous shale, sandstone and limestone in the Akseki–Anamas Platform (Western Taurus, Turkey). This study evaluates the biomarker parameters calculated using the 191 triterpane and m/z 217 sterane distributions obtained thru GC-MS analysis performed on the surface samples. Sterane distribution is $C_{29} > C_{27} > C_{28}$ where C_{29} and C_{27} steranes show bimodal distribution. According to this distribution, relative abundance of C_{28} shows green algae and diatom and relative abundance of C_{27} indicates red algae and planktons while C_{29} indicates higher plants, green and red algae. The dominant sterol is C_{29} in the majority of the higher plants. In spite of that analyzed samples do not have terrestrial characteristics, C_{29} ratios are somewhat higher than the C_{27} ratios (C_{27} ; 38%, C_{29} ; 42%). And this means petroleum originated from marine carbonate rich source rocks might be rich in C_{29} which shows algal composition. The $C_{31} 17\alpha(H), 21\beta(H)-30$ Homohopane (22R)/ C_{30} ratio is 1.59, pointing carbonate–marine shale and marls. Similarly, the existence and relatively abundance of C_{29} hopane, the C_{29}/C_{30} ratio (>0.6), the C_{22}/C_{21} tricyclic terpane (0.5), the C_{24}/C_{23} tricyclic terpane (0.43) and the $Ts/Ts+Tm$ (0.46) ratios all point to a carbonate lithology. The Diasterane/Sterane ratio is quite low (0.39) which supports all these findings. The $20S/(20S+20R)$ ratio (0.95) and the $\beta\beta/(\beta\beta+\alpha\alpha)$ sterane ratio (0.53) indicate maturation. $\beta\beta/(\beta\beta+\alpha\alpha)$ sterane and $20S/(20S+20R)$ ratios show maturity. The existence of C_{30} sterane points to a marine environment supported by the Sterane/Hopane (1.24) ratio. Accordingly the major part of organic matter could originate from marine material although some terrestrial input.